Arnulfpost

DECEMBER 2022



HELLO, MUNICH

Our Google teams in Munich are powered by innovation. This same innovative spirit is at the heart of the planning, restoration and future operations of Arnulfpost, our new development center.

We're sensitively restoring this architectural icon in central Munich in the most sustainable way possible, while also working to minimize construction waste and noise.

To this end, we've partnered with an exceptional team of architects and engineers. We're drawing on their expertise to create a smart, sustainable Arnulfpost that benefits not only Google, but also visitors and the local community.

You can read more about the innovation behind the construction of Arnulfpost in this third issue of our newsletter, which we will be publishing twice a year to keep all interested parties updated on our progress until we open. If you missed the first two issues, you can find them at realestate.withgoogle.com/arnulfpost

As dialogue is a two-way street, our team is also eager to hear any ideas, questions or suggestions you may have. You can reach my colleagues at <u>arnulfpost@google.com</u>



Sincerely, Dr. Wieland Holfelder Site Lead Google Munich



Site overview with the 5 cranes positioned strategically to optimize construction logistics



GREENER CONSTRUCTION THROUGH INNOVATION

We're committed to a carbon-free future and have set ourselves the goal of operating on 24/7 carbon-free energy, everywhere by 2030. At the Arnulfpost site, we've implemented rigorous environmental protection standards to minimize the impact of our construction and restoration work.

Our journey to make the new engineering center more sustainable began right at the planning stage, with the help of digital building information modeling (BIM). This digital tool creates 3D models that help architects, engineers and construction experts to plan, design, build and manage buildings more efficiently, while also reducing material waste.

Across the Arnulfpost site, our construction team is working with sustainable

technologies. One example is the world's first large electric rotary drill powered exclusively by battery, which harks back to the electric postal vehicles that operated here in the 1930s; also cutting-edge technology for their time. The electric drill has both cut the need for using diesel fuel and minimized noise pollution.

Due to the dimensions of the Arnulfpost site, operating two cranes simultaneously without them obstructing each other poses a logistical challenge. Our team found a smart solution: The cranes have been placed on pile platforms, with their bases free-floating up to five meters above ground. This allows material to be deposited directly below the cranes, saving both time and space.

Reducing and eliminating construction waste is another key priority in the building of Google's new development center. For example, having prefabricated stair elements and columns delivered rather than manufacturing them onsite results in less localized construction waste.

These are just a few of the innovations that are helping us to minimize our impact during construction at Arnulfpost and keep the site as green as possible. Earlier this year, we decided to take our environmental goals one step further: Google Arnulfpost is now pursuing <u>ILFI Zero Carbon</u> <u>certification</u>. This initiative, run by US-based nonprofit International Living Future Institute (ILFI), aligns with Google's goal of keeping its carbon emissions as low as possible. To be awarded ILFI certification, buildings must meet predefined energy and carbon reduction targets for both their construction and their operations.

SMART SOLUTIONS FOR ALL

At Google, we don't believe in innovation simply for innovation's sake. Innovation should always strive to meet the needs of all, while being in line with our sustainability goals. In a sense, we're following in the footsteps of Robert Vorhoelzer, Franz Holzhammer and Walther Schmidt, the masterminds behind the historic 1926 Arnulfpost building, who were great innovators of their time. Today, we're also using intelligent innovations to construct our Google engineering center on the very same site. Employees and visitors alike will enjoy the new green spaces around Arnulfpost, which are irrigated exclusively using rainwater collected in underground tanks with a capacity of 340,000 liters.

Inside Arnulfpost, a hybrid ventilation system provides optimal indoor ventilation and climate control. A component of this innovative concept involves employees opening up windows near their workstations at set times. As soon as windows are manually opened, other automated ventilation systems are shut down – again conserving resources and energy. "The mixed ventilation strategy is one of the major drivers in the project's sustainability plan," emphasizes Head of Planning Rob Liedgens.

While the glass dome on the rotunda is also part of the building's ventilation system, it fulfills other important functions as well. Using smart glass, its panes can be darkened to filter out excessive sunlight or regulate the temperature, eliminating the need for mechanical shading measures.





The rotunda building's hybrid ventilation concept

There are plenty of bicycle parking spaces for visitors to the site, and we encourage our Google employees to make greener choices for their work commute as well. As such, there will be ample bicycle parking spaces reserved for employees in a dedicated area of the basement, accessible via an energy-efficient elevator system.

In accordance with local building regulations, we've also integrated a modest car parking garage into the basement, including charging stations for e-cars. Our fully-automated parking system facilitates space-saving car storage by arranging vehicles in tiered racks, also eliminating the need for space-intensive access routes or energy-intensive ventilation and lighting systems.



The space for the underground car parking facilities between the rotunda and the column hall

ARCHITECTURE ALWAYS TELLS A STORY



Rob Liedgens is in charge of project planning for the engineering center. He talks about how innovative the Arnulfpost was back in the 1920s, and how redeveloping historic buildings can go hand in hand with sustainability.

When people think about innovation, their first thought is of technical innovation. Does that also apply to the architecture and construction of the engineering center?

Naturally, technical innovation plays an important role in a project like this. But for us, the innovation began with Arnulfpost's conception. We want to integrate the new Arnulfpost and its surrounding grounds seamlessly into the Munich cityscape, and we want to make it more open and green. So we're looking at the big picture – the ensemble, as we call it. Because at the end of the day, architecture always tells a story – and ideally one that everyone can understand.

How innovative was the Arnulfpost of the 1920s?

The architects Robert Vorhoelzer, Franz Holzhammer and Walther Schmidt, who designed the historic Arnulfpost, were very innovative thinkers. This is evident in the glass dome on the rotunda, which floods the building interior with light and also has an aesthetic function, i.e., recognition value. The rotunda itself, which was once used to house Munich's parcel delivery depot, was also innovatively planned for optimal efficiency. Its 58 entry gates were custom built for the 58 electrically-powered trucks that used to deliver to Munich's 58 postal districts.

Was it an advantage that as much as possible of the original Arnulfpost building had to be preserved?

Most definitely, first and foremost because working with existing buildings is more sustainable than tearing something down and rebuilding it. Whenever we did need to source new materials, we always chose the most environmentally friendly option.



A view of the rotunda with its 58 entry gates

While we're talking about restoring some of the building's original features, which features are you most excited about and why?

Historic preservation is about conserving what already exists. But we also want to create the best possible space for future employees and visitors. That's why our designs for the new Arnulfpost feature dormer windows on the two wing buildings, even though preserving this feature of the original building was not actually required by the Office for the Protection of Historical Monuments. It's a win-win situation: We were able to reintegrate a historical element into our construction plans and, at the same time, create new work spaces with an additional source of natural light.

Will people who visit Arnulfpost notice all of the innovation that has been incorporated into the building?

Those who visit Arnulfpost won't notice many of its more innovative aspects. At least, not on a conscious level – and that's the intention. But there will be areas onsite where some of our bolder innovations are at the forefront. The best example of this is the landscaping: People will definitely notice that there are a lot more trees, bushes and birds chirping. And that's the way it should be.



The future central courtyard will be built on top of the car parking facility, connecting Arnulfstraße and Tillystraße

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